IBM TotalStorage Virtual Tape Server Extends Performance, Capacity, and Availability and Supports Attachment of the IBM TotalStorage Enterprise Tape Drive 3590 Model H1A

Overview
The IBM TotalStorage™ Virtual Tape Server 3494 Models B10, B18, and B20 can now utilize the increased capacity of the recently announced IBM TotalStorage Enterprise Tape Drive 3590 Model H1A. Up to 60 GB (180 GB with 3:1 compression) of virtualized data can be stored on a 3590 Extended High Performance Cartridge Tape, or up to 30 GB (90 GB with 3:1 compression) on a 3590 High Performance Cartridge Tape. This increased cartridge capacity can reduce the level of cartridge handling, physical mounts, and number of cartridges required to accommodate your storage requirements, thus lowering the cost per MB of tape storage and operations. You can upgrade your installed 3590 Model B1A or E1A Tape Drive to the Model H1A.

Business continuance enhancements enable system administrators to optimize your IBM TotalStorage Peer-to-Peer Virtual Tape Server (P2P VTS) to keep pace with emerging business requirements of 24x7x365 availability to critical business information. New enhancements include:

-Preferred Master VTS — designates which VTS is the “master” VTS, unless it is unavailable.
-Scratch Mount Direction — instructs the Model AX0 to select the “preferred VTS” for scratch mounts, regardless of which VTS has the valid copy of the volume.
-Improved Link Balancing — allows monitoring for a slower remote link to improve performance in the I/O selection process.

Fulfillment of Statement of Direction
The VTS support of the Enterprise Tape Drive 3590 Model H1A fulfills the Statement of Direction included in Hardware Announcement 102-183, dated June 25, 2002.

Key Prerequisites
Appropriate levels of host system software are required for attachment of a VTS to IBM zSeries™, ES/3090™, ES/9000®, S/390®, IBM pSeries™, RS/6000®, Sun servers, HP servers, and Intel®-compatible servers. This announcement requires no change to the supported host operating system software.

Planned Availability Date
June 6, 2003
The Enterprise Tape Library 3494 continues to evolve to meet your changing storage requirements. Enhancements have been made to the 3494 VTS and PtP VTS.

**VTS Enhancements**

The VTS can now utilize the increased capacity of the recently announced IBM TotalStorage Enterprise Tape Drive 3590 Model H1A. Up to 60 GB (180 GB with 3:1 compression) of virtualized data can now be stored on a 3590 Extended High Performance Cartridge Tape, or up to 30 GB (90 GB with 3:1 compression) on a 3590 High Performance Cartridge Tape. Just as with the 3590 Model E1A, the VTS supports up to 12 dedicated tape drives. With the larger capacity, your business operations can improve overall library efficiencies and lower the cost per MB of tape storage and operations by requiring:

- Fewer cartridges
- Less handling
- Fewer cartridges requiring mounting

You can upgrade your installed 3590 Model B1A or E1A Tape Drive in the associated 3494 Model D12 Frame to the 3590 Model H1A.

**PtP VTS Enhancements**

In a PtP VTS configuration, the business continuance features will enable system administrators to “fine tune” the VTS subsystem to maximize PtP VTS operation. The following functions are now provided:

**Copy Files Preferred to Reside in Cache** — A switch is now available to set the management of copy files in the cache at the remote VTS. This can improve the likelihood of the most recent copies being in the cache when a recovery is performed. This can enable a faster recovery of a large number of volumes.

**Recalls Preferred for Cache Removal** — This control allows you to tailor one aspect of the management of the data in the cache at the remote VTS. It allows you to preference recalled data for removal from cache first, so that recalled data will minimally displace other data in the cache. This can enable more cache hits and fewer recalls.

**Preferred Master VTS** — The Virtual Tape Controller 3494 Model AX0 will be able to select a “preferred master” VTS, where in a normal running system the Model AX0s will force that VTS to become the master. If a failure warrants a master switchover, the Model AX0s will automatically switch the master to the other VTS, and when conditions are fixed again the Model AX0s will switch the master back to the “preferred master” VTS. The primary VTS can complete typical workloads if there is a severed link between local and remote sites.

**Scratch Mount Direction** — Provides an additional option when a preferred VTS is specified to instruct the Model AX0 to select the preferred VTS for scratch mounts (category mounts), regardless of the state of the validity of the data volume selected in the preferred VTS. This can avoid selection of a low bandwidth remote connection and maximize performance in your PtP VTS operation.

**Improved Link Balancing** — An option is now available on a Model AX0 for use in the I/O selection to indicate that there is a limited bandwidth to one of the VTSs. If this option is active, and the Model AX0 is in balanced mode, the option will prefer the VTS without the limited bandwidth. This can improve performance when there are few mounts coming into the VTS.

**Product Positioning**

The Enterprise Tape Library 3494 VTS attachment of the 3590 Model H1A Tape Drive provides a 50% increase in tape cartridge capacity over 3590 Model E1A Tape Drives resulting in a 60 GB native capacity with 3590 Extended High Performance Cartridge Tape, or 30 GB native capacity with 3590 High Performance Cartridge Tape. Your investment in a 3590 Model H1A Tape Drive can lower the costs per MB of tape storage and tape operations, reduce the number of overall cartridges, enable less cartridge handling, and improve PtP VTS operations. Today’s data storage environments demand greater performance and availability on a 24x7x365 basis.

The new business continuance functions can enable you to improve overall VTS PtP performance. The logging capabilities can aid you in analyzing and optimizing operations.

The VTS and the Enterprise Tape Drive 3590 Model H1A offer the assurance and reliability you expect by delivering proven products to meet your most critical business requirements.

**Reference Information**

Refer to the Enterprise Tape Drive 3590 Model H1A announcement in Hardware Announcement 102-183, dated June 25, 2002.

Refer to the following Enterprise Tape Library 3494 VTS announcements:

- The VTS FICON™ attachment for the VTS Model B10 and B20 and other functional enhancements in Hardware Announcement 102-187, dated July 9, 2002
- The VTS Models B10 and B20 in Hardware Announcement 101-215, dated July 31, 2001
- The increased tape drives, VTCs, extended cartridge support, functions, and attachment options to store more data on a VTS Model B18 in Hardware Announcement 101-164, dated June 12, 2001
- The advanced function and expanded attachment options for the VTS Model B18 in Hardware Announcement 100-347, dated November 7, 2000
- The enhanced performance, additional disk storage capacity, and additional attachment options for the VTS Model B18 in Hardware Announcement 100-130, dated May 9, 2000
- The Peer-to-Peer VTS configurations in Hardware Announcement 100-052, dated February 29, 2000
- The advanced function and SCSI attachment features for the Model B18 in Hardware Announcement 199-041, dated February 16, 1999
- The VTS Model B18 in Hardware Announcement 198-128, dated June 2, 1998
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A revised copy of the IBM TotalStorage Enterprise Automated Tape Library (3494) Introduction and Planning Guide (GA32-0448) is available now by selecting “Tape Publications” from this Web site:

http://www.storage.ibm.com/hardsoft/tape

A revised copy of the IBM TotalStorage Enterprise Automated Tape Library (3494) Operator Guide (GA32-0449) will be available concurrent with planned availability.

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Technical Information

Specified Operating Environment

Hardware Requirements: The new Enterprise Tape Drive 3590 Model H1A can now be installed in a Tape Drive Expansion Frame 3494 Model D12 associated with a VTS Model B10, B16, B18, or B20.

Note: The 3590 Model H1A is not currently supported for installation in the 3494 frame features (#5302, #5304, #5502, #5503, or #5504). Customers with 3590 Model B1A or E1A Tape Drives may upgrade their configurations to include the 3590 Model H1A Tape Drives. All 3590 Tape Drives in the associated Model D12 Frames must be the same model type (either all 3590 Model B1A, or all 3590 Model E1A, or all 3590 Model H1A Tape Drives). A VTS microcode update will be shipped with the addition of the 3590 Model H1A Tape Drives to a 3494 Model D12 associated with a VTS.

Note: The VTS microcode support of the 3590 Model H1A Tape Drives (VTS code level 2.27.600.xx or higher) requires that the 3494 library manager (LM) be at LM code level 527.19 or higher.

Exported stacked volumes created on 3590 Model E1A Tape Drives can be imported into VTS configurations with 3590 Model H1A Tape Drives; however, exported stacked volumes created on 3590 Model H1A Tape Drives cannot be imported into configurations with 3590 Model B1A or E1A Tape Drives.

The new business continuance enhancements on the VTS are available to an installed VTS by installing a new microcode update. For PtP configurations, the microcode update on each component can be installed while the rest of the configuration remains active.

Software Requirements: There is no change to the host operating system software for support of this announcement.

Compatibility: Virtual volumes are compatible among zSeries™, S/390®, pSeries™, RS/6000®, Sun, HP, and Intel®-compatible servers. Data stored on stacked volumes of the VTS Model B10, B16, B18, or B20 are compatible with each model.

Limitations: Exported stacked volumes created on 3590 Model H1A Tape Drives cannot be imported into a VTS that has 3590 Model B1A or E1A Tape Drives.

Planning Information

Customer Responsibilities: Physical planning is a customer responsibility. Detailed physical planning information is in the IBM TotalStorage Enterprise Automated Tape Library Introduction and Planning Guide (GA32-0448).

Cable Orders: Cables to attach the 3590 Model H1A Tape Drives are available with those tape drives.

Direct Customer Support: Eligible customers can obtain installation and usage assistance through ASK Support. To obtain information on customer eligibility and registration procedures, refer to IBMLink™ ASKQ, using the search word 3494.

Supplies: None

Security, Auditability, and Control

This product uses the security and auditability features of host hardware, host software, or application software.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.
Terms and Conditions

This product is available for purchase under the terms of the IBM Customer Agreement.

IBM hardware products are manufactured from new parts and used parts. In some cases, the hardware product may have been previously installed. Regardless, IBM’s warranty terms apply.

**MES Discount Applicable:** Equal to the volume commitment discount

**Field Installable Feature:** Yes

**Warranty Period:** One year

**Customer Setup:** No

**Licensed Internal Code:** Same license terms and conditions as designated machine

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